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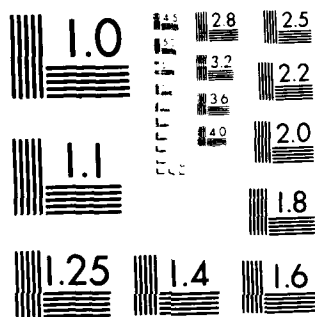
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**STRESS AND THE SENIOR LEADER:  
A PROPOSED STRESS REDUCTION PROGRAM  
FOR THE MILITARY**

BY

**COMMANDER GARY R. CHIAVEROTTI, USN**

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Much research has been done on the causes, effects, and treatment of battle stress. Recognizing that any decrease in effectiveness on the field of battle translates into a decrease in combat power, most works have concentrated on the front line combat soldier. Volumes have been written with the purpose of ensuring that officers, the leaders in combat, have the requisite knowledge to minimize the psychological impact of sustained operations on the combat effectiveness of their men.

While this focus on the soldier has addressed a very large problem, it has resulted in a very large gap by failing to address the question of how the leader, himself, is effected by battle stress. This issue has an even more profound effect on the battlefield since it is the senior leader who must plan and ensure execution during an engagement. The leader's problem is magnified by the uncertain, fluid, and ambiguous nature of the environment he must make decisions in, and the grave consequences of wrong decisions.

This study explores, through literature review, the causes and effects of battle stress, and ways to minimize the impact of battle stress on the senior leader. Based on this review, a training system to minimize the effects of battle stress on the senior leader which will fit into the current military officer's educational system, is proposed.

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STRESS AND THE SENIOR LEADER:  
A proposed stress reduction program for the military  
AN INDIVIDUAL STUDY PROJECT

by

Commander Gary R. Chiaverotti, USN

Dr. Herbert F. Barber  
Project Advisor

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U.S. Army War College  
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## ABSTRACT

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This study explores, through literature review, the causes and effects of battle stress, and ways to minimize the impact of battle stress on the senior leader. Based on this review, a training system to minimize the effects of battle stress on the senior leader which will fit into the current military officer's educational system, is proposed.

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COMBAT STRESS AND THE SENIOR LEADER:  
A TRAINING PROGRAM TO MINIMIZE ITS EFFECTS

CHAPTER I

INTRODUCTION

As in walking you take care not to tread upon a nail, or turn your foot, so likewise take care not to hurt the ruling faculty of your mind. And if we were to guard against this in every action, we should enter upon action more safely.

Epictetus, The Enchiridion<sup>1</sup>

RESEARCH ISSUE

The effects of stress in the civilian workplace has received much attention in recent years. Research on the effects of stress and techniques to prevent or minimize its impact have been covered widely by the media, and in books and professional journals.

Stress experienced during warfare, usually referred to as battle stress, may be the ultimate form of stress. It is caused by threats to the most basic of human values, including life itself. Modern, more lethal weapons coupled with around the clock operations made possible by technological advances will create levels of ferocity and uncertainty on the battlefield much higher than experienced in previous wars. This translates into ever higher levels of battle stress.

One can easily, and correctly, conclude that battle stress will be a serious problem in any future war. While many studies have been done, and numerous books and articles written on the causes, effects, treatment, and prevention of battle stress, the implications have been largely ignored by all four services, with the exception of the medical corps research branches.<sup>2</sup> The large body of knowledge developed has done nothing to improve the knowledge, and therefore combat effectiveness, of the officer or enlisted man because no training program exists to give them this absolutely essential knowledge.

It has long been known and well documented that prolonged or intense exposure to stressors will decrease an individual's ability to perform. For the military leader, this may translate into incremental or catastrophic loss of unit effectiveness and/or the inability to fight in a sustained manner. Discussing battle stress, Army Field Manual 22-9 states, "Combat capability is cut whether the unit is at 50 percent strength or at full strength with soldiers who are only 50 percent effective."<sup>3</sup> A senior leader must be aware that both he and his subordinates will be affected by battle stress in some form, and this may lead to degraded performance on the field of battle. Hence, war planning must be conducted with this in mind. Training, to minimize the anticipated effects of stress, must be incorporated into war plans and institutionalized well before a conflict begins.

#### OBJECTIVES OF THE STUDY

A senior leader must accomplish two tasks in order for our

forces to be ready to cope with the stresses which will be encountered in any future battle or war:

1. Ensure all levels of his force are aware of what battle stress is, what effects it elicits, and that proper treatment for battle stress casualties will be available on the battlefield; and,

2. Provide methods and training which will diminish the impact that battle stress will have on his own performance and the performance of his force.

Both of these tasks must be accomplished, in the main, through comprehensive training programs.

While current methods of training use one or two of the methods available to assist senior leaders to develop their individual stress coping techniques, they are inadequate. This paper studies the stressors encountered during battle, their physiological and psychological effects, and techniques available to minimize these effects.

The objective of this paper is to develop a framework and methodology for a long-term training program, one that is integrated into an officer's career education path, and is designed to assist the senior leader in dealing with the effects of combat stress on his own decision-making process.

#### QUESTIONS TO BE ADDRESSED

The symptoms of battle stress and their effects on an army have been written about for over a century and a half. However, the scientific study of battle stress started only in World War

II. In order to more clearly understand the current lack of knowledge about how battle stress affects the senior leader, Chapter II briefly describes the historical roots of the problem.

After reviewing the historical development of battle stress, Chapter III defines the term "stress" and describes the psychological and physiological aspects of stress. The remaining three chapters then discuss the following questions:

- A. What are the causes and effects of battle stress;
- B. What are the techniques and methods available for the senior leader to minimize the effects of battle stress; and,
- C. How can these techniques and methods be combined to develop a comprehensive officer training plan to minimize the effects of battle stress on decision-making.

#### ENDNOTES

1. Epictetus, The Enchiridion, p. 34.
2. Robert J. Scheider and Richard L. Luscomb, "Battle Stress Reaction and the United States Army," Military Medicine, Vol. 149, 1984, pp. 66-69.
3. Department of the Army, Field Manual 22-9, Soldier Performance in Continuous Operations, p. 1-2.

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CHAPTER II

HISTORICAL DEVELOPMENT AND PERSPECTIVE

If no one had the right to give his views on military operations except when he is frozen, or faint from heat and thirst, or depressed from privation and fatigue, objective and accurate views would be even rarer than they are.

Carl von Clausewitz, On War<sup>1</sup>

This quote starts Chapter Five, Book One of On War by Von Clausewitz. It shows he was the first of the modern writers to discuss the importance of stressors and stress on people during combat. References to, and discussions about, the human or "moral factors" of war are interspersed throughout his book. He considered the essence of military genius to be a "harmonious combination of elements,"<sup>2</sup> which included coup d'oeil (the inner eye, the ability to make quick decisions based on intuition), determination, and presence of mind. All three of these qualities had to remain in balance for the great general (senior leader) to remain effective.

Clausewitz was also the first to acknowledge that, in addition to the common soldier, senior leaders are affected by battle stress when he wrote of generals, "Some may bring the

keenest brains to the most formidable problems, and may possess the courage to accept serious responsibilities; but when faced with a difficult situation they still find themselves unable to reach a decision."<sup>3</sup> Battle stress causes an imbalance in the three qualities needed for successful generalship, resulting in the inability to make a decision. This lapse on the part of a general may cause the defeat of his army, as witnessed many times through history.

As will be seen, after each major war, books and articles appear about battle stress (also called battle fatigue, shell shock, and a myriad of other names) casualties with various theories on causes, prevention, and treatment. Unfortunately, after a brief period of public outrage and fervor for change in military training methods, all is quickly forgotten. These short attempts at remedying the situation have not lead to an institutionalized training program. Hence, after a brief time, all efforts at rectifying the situation are usually abandoned.

The next time research was conducted and a major work written on battle stress was during World War I. The majority of research on battle fatigue, as it was then called, was done by the Soviets.<sup>4</sup> Very little of this research is available in the western press. However, we do know that the methods currently used by most countries in treating battle shock casualties are based on the original Soviet model, developed during World War I, which prescribes treatment as soon as possible (immediacy), as close to the front as possible (proximity), and with the expectation of the patient returning to the original unit after a

brief time (expectancy).<sup>5</sup>

One excellent book, written by Lord Moran, who served as a regimental doctor during World War I, described, in anecdotal form, his experiences with, and observations of, battle stress. He considered man's reaction to battle stress on a continuum from displaying courage, which he describes as a moral quality, to cowardice. He argued that "Courage is will power" and tells "The story of how courage was spent in France (which) is a picture of sensitive men using up their will power under discouraging circumstances while one by one their moral props were knocked down."<sup>6</sup> He felt that man's reactions to the stress and strains of battle were manifested because of the psychological drain which the stresses and strains caused. His conclusions on how man is effected by battle stress and his recommendations on how to minimize the effects, all of which will be discussed in subsequent chapters, were amazingly accurate when compared to the results of recent, more rigorous experimental study. Moran's description of initial adaptation by the "old veteran" with the eventual loss of courage was a precursor to Dr. Hans Selye's General Adaptation Syndrome, which is described through laboratory studies.

With the next big war came more books about battle stress. World War II, however, was the first of several succeeding wars which saw a large number of scientific studies concerning the subject undertaken and completed during the conflict. The problems associated with man's inability to cope with the horrors of war were recognized and attempts made to define the



problem as well as determine effects and develop corrective measures. In addition to the four volume work, The American Soldier, by Stouffer, et al, two major works require mentioning. The first, Men Against Fire, by S.L.A. Marshall is considered one of the classic works on battle stress. While conducting psychiatric research for the Army on the reactions and actions of men to the stresses of combat he found that "...less than 25 percent of our infantry line employed hand held weapons effectively when under fire."<sup>7</sup> His work stunned the Army, and was the first time that the effects of battle stress on an Army's effectiveness were quantified. Marshall's book caused major changes in enlisted training which resulted in better performance during the Korean War. Men Against Fire was written for the leader, but not about how the leader himself was affected by battle stress. Marshall, who was an Army Officer, continued the trend, apparently feeling that officers are above being affected. However, as discussed shortly, the leader's action must be studied and every attempt made to improve his abilities since he is the key decision-maker on battle. If the leader's abilities to perform are diminished, the ability of the army to fight is also diminished.

The second book, Aircrew Stress in Wartime Operations, is a compilation of numerous studies conducted by British scientists. Their work was specifically aimed at describing and analyzing the degradation suffered in the performance of the British Air Command that was caused by battle stress. After conducting field studies similar to Marshall's, the British team drew conclusions

and used them as hypotheses to replicate results in the laboratory.<sup>8</sup> Their research was excellent, and was instrumental in determining the effects of stress on decision-making.

The question remains, why was the research so aimed at the performance of the soldier and not the leader? In addition to the perception that the leader was not as affected by battle stress as the soldier, the problem, in terms of manpower drain, was enormous. Table 1 illustrates the large number of soldiers effected by battle stress as a ratio of psychiatric casualties (casualties from battle stress) to physically wounded. The figures represent the average, although the ratio varied from battle to battle. How the number of psychiatric casualties varied will be discussed later in this Chapter.

TABLE 1. PSYCHIATRIC CASUALTIES IN COMBAT<sup>9-10</sup>

<u>War</u>	<u>Psychiatric</u> <u>Casualties</u> / <u>Physically</u> <u>Wounded</u>
WW II	
All US forces	36 / 100
US forces, Europe	20 / 100
Korea	17 / 100
Vietnam (Marines only)	11 / 100
Israel	
1973 Yom Kippur	30 / 100
1982 Lebanon	20 / 100

There are two themes common through all of these historical writings. First, all of the writers and researchers expressed many of the same ideas about the external and internal causes,

and effects of battle stress and ways to cope with it. Second, and most important for this discussion, everyone will be affected by battle stress. The only variables are when it will happen and to what extent the individual will be affected. But it was left to Dr. Hans Selye to first describe the physical effects of stress and its psychological origins before interest and research was stimulated in the civilian community where it was recognized that stress decreased the productivity levels of senior executives.

When Dr. Hans Selye published The Stress of Life, the response and interest was overwhelming. His book introduced the subject in the civilian community and added the word "stress" to the common lexicon. He found that the body's reaction to a stressor was a generalized reaction, with the body responding in a like manner to any stressor, with only the intensity and aftermath being different. While his book deals with the stresses of everyday experiences, Selye's findings, conclusions, and recommendations can be generalized and applied to the effects and manifestations of battle stress because of the body's general reaction to stressors.

Vietnam did not provide a very good battle stress model and few studies were done on the effects of battle stress. Referring back to Figure 1, battle stress casualties were not as large a drain on manpower as had been experienced in other wars. While not accepted by all observers, the reasons normally

espoused for the Vietnam experience are:

- Low Wounded and Killed in action rates
- A policy of twelve month combat tours
- Adequate rest and recuperation opportunities
- Excellent support and supply system
- Allied air superiority
- Low lethality and intensity of battle
- Brevity of most combat operations
- Rapid and dependable medical evacuation systems
- Mostly light infantry operations

These factors contributed to reducing the stress, fear, and fatigue commonly associated with previous wars, thereby lowering the general level of stress on the individual.<sup>11-12</sup>

The most recent and in depth research on battle stress has been conducted by the Israelis. They conducted rigorous and comparative studies of the 1973 Yom Kippur War and the 1982 war in Lebanon. By referring to Figure 1, it can be seen that psychiatric casualties were significant, accounting for between 20 and 25 percent of non-death casualties. These studies, as summarized by Belenky, et al, were the first to definitively link intensity of combat, as defined by the number of physically wounded, to the incidence of battle stress casualties.<sup>13</sup> In addition, the Israelis identified the factors which resulted in units remaining effective even in very high stress conditions. Of particular importance was unit cohesion and morale which was directly linked to the soldier's perception of their leader's competence. It was found that the perception of a leader's

competence in battle is determined by "both the perception of the commander's overall professional competence, and more specifically, the perception of the care with which the commander tailors the missions he receives from higher command to the particular strengths and weaknesses of the men under his command."<sup>14</sup> Because the leader is perceived to be so important to unit performance, anything which would degrade his ability to make decisions will lower unit performance. It is for this reason a training system for officers to learn how to minimize the effects of battle stress is so important and must be addressed.

Before coping methods can be discussed, Chapter III will define and describe what stress is and how it affects the human body.

#### ENDNOTES

1. Carl von Clausewitz, On War, p. 115.
2. Ibid., pp. 100-103.
3. Ibid., p. 103.
4. Richard A. Gabriel, Soviet Military Psychiatry: The Theory and Coping with Battle Stress, pp. 33-34.
5. Russell J. Gibler, Battle Stress: Management Techniques, pp. 5-6.
6. Lord Moran, The Anatomy of Courage, p. 61.
7. S.L.A. Marshall, Men Against Fire: The Problem of Battle Command in Future War, p. 53.
8. E.J. Dearnaley and P.B. Warr, Aircrew Stress in Wartime Operations, pp. v-vi.

9. Gregory Lucas Belenky, et al, "Battle Stress: The Israeli Experience," Military Review, July 1985, p. 29.
10. Charles R. Figley, Stress Disorders Among Vietnam Veterans: Theory, Research, and Treatment, p. 27.
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13. Gregory Lucas Belenky, et al, Israeli Battle Shock Casualties: 1973 and 1982, pp. 19 and 33.
14. Ibid., p. 21.

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CHAPTER III

STRESS: DEFINITION AND DESCRIPTION

Men are disturbed not by things, but by the views which they take of things.

Epictetus, The Enchiridion<sup>1</sup>

STRESS

Before moving toward a discussion of battle stress effects on the senior leader, and ultimately to designing ways to minimize the effects of battle stress, the term "stress" must first be defined. "Stress" is an oft used but little understood term. For example, how many times is the phrase "He is under stress" used? It is just as meaningless as saying "He is running a temperature." What the two phrases really refer to is an excess of stress or higher than normal body temperature. According to Selye, "Stress cannot and should not be avoided." He felt that everything we do is based on the body adapting to a stressor. As the premier researcher on stress, most other researchers use Selye's definition of stress as a starting point for their work. Therefore, his definition will be used in this paper.

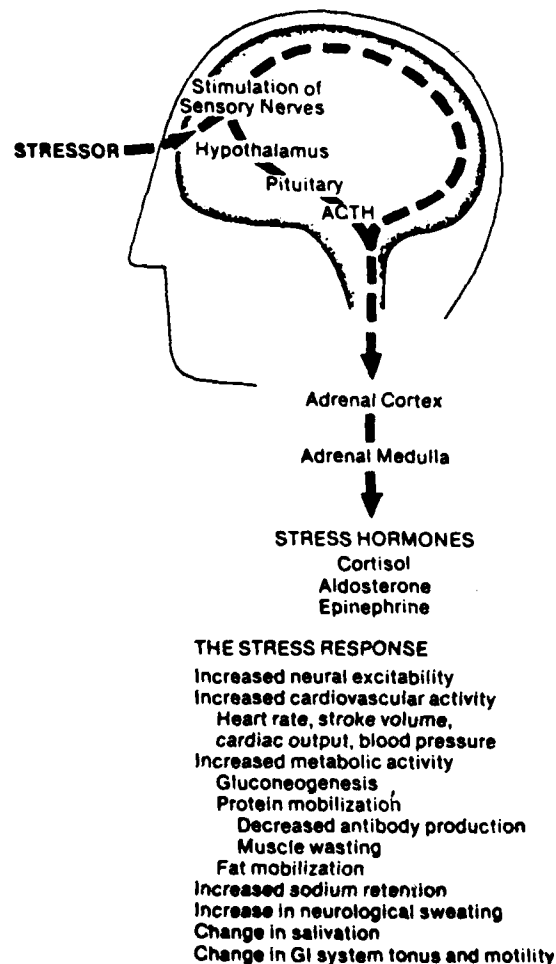
Selye defined stress as follows:

STRESS IS THE STATE MANIFESTED BY A SPECIFIC SYNDROME WHICH CONSISTS OF ALL THE NONSPECIFICALLY-INDUCED CHANGES WITHIN A BIOLOGICAL SYSTEM.<sup>2</sup>

In short, Selye found the body reacts to one stressor in the same way it does to any other stressor. What these reactions are will be key in determining how to cope with the stress reaction.

Figure 1 illustrates the bodies stress response pathway and summarizes the manifested responses.

FIGURE 1. THE STRESS RESPONSE PATHWAY.<sup>3</sup>





The basic response has been characterized as the "flight or fight response" by many researchers. The body's response to stress was originally developed to gear itself up to some form of physical threat. The general actions, therefore, attempt to prepare the body for physical action. Physical arousal to a physical threat was, and still is, appropriate. It is usually of short duration and dissipated with action. However, in the modern world physical arousal to symbolic threats is more common. In this case, physical arousal is inappropriate since it tends to be of longer duration and is not so easily dissipated.<sup>4</sup> This has been demonstrated by several medical studies of U.S. Soldiers which showed increased secretion levels of adrenalin and corticoids under combat or simulated combat conditions, the latter involving strictly perceived threats.<sup>5</sup>

The importance of how events are perceived cannot be overemphasized. Selye felt that "For man the most important stressors are emotional..." and "...it is especially true that, in our life events, the stressor effects depend not so much upon what we do or what happens to us but on the way we take it."<sup>6</sup>

From the brief discussion in the previous two paragraphs, two important elements of stress may be summarized:

- 1) the body reacts physically to any stressor in a specific, definable manner, and
- 2) perception of things or events is probably the most important factor in causing unhealthy reactions to a stressor.

The key to a discussion on stress is determining what is meant by a stressor. Selye believed that the same pattern of

physiological stress responses occur for all stressors, and that psychological "distress" is different from physiological "stress."<sup>7</sup> Herein lies the key to our discussion. Stress, or more correctly distress, only manifests itself in a destructive way if we perceive the stressor to have some consequence which we see as threatening.

Since Selye's initial research, one other group of stressors must be added which does not fit into his strictly psychological scheme. Included are such physiological stressors as disruption of biorhythms, malnutrition, and noise.<sup>8</sup> These three stressors will figure heavily in the discussions to follow. Table 2 is a list of current causes of stress according to Meichenbaum and Jaremko.

TABLE 2. MAJOR CAUSES OF STRESS<sup>9</sup>

PSYCHOSOCIAL

Adaptation  
Overload  
Frustration  
Deprivation

PERSONALITY

Self-perception  
Anxiety  
Behavioral pattern  
Control

BIOECOLOGICAL

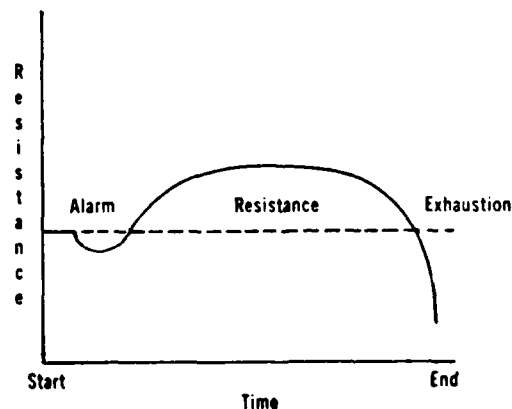
Biorhythms  
Noise  
Nutrition

Another model of human reaction and adaptation to stressors conceives of a two level regulatory system, one level processing the objective features of the environment, such as form,

location, and function of external objects, and the second level processing the emotional reactions to objects, such as fear or anxiety. These two separate processes take place simultaneously, and do interact.<sup>10</sup> This model, proposed by Leventhal and Nerenz, is very similar to the Selye model, in that reaction to stressors is dependent on our perceptions, or emotional responses. Leventhal and Nerenz's diagram of this process is contained in Appendix A.

The last theory to be discussed must be Selye's General Adaptation Syndrome (G.A.S.). It was so named by Selye because the stress reaction it deals with is general in that it effects large portions of the body, adaptive because it stimulates defenses and helps acquire and maintain a stage of inurement, and syndrome since individual manifestations are coordinated and partly dependent on each other.<sup>11</sup>

FIGURE 2. SELYE'S GENERAL ADAPTATION SYNDROME.



As illustrated in Figure 2, this triphasic model of the body's response to stress, hereafter referred to as the stress response, begins with the Alarm Reaction Phase. In the alarm reaction (A.R.) phase, general resistance of the body to the

particular stressor with which the G.A.S. had been elicited, drops to below normal. This corresponds to a decrease in ability to respond to other stimuli or stressors. The leader is unable to think clearly, synthesize data, or make rapid decisions. Adaptation takes place as the body gears up and responds to the stressor. It is during this second phase, the stage of resistance (S.R.), that the capacity to resist the effects of the stressor rises considerably above normal. Given that the body continues to react to a stressor for a prolonged period, there will be a point reached, called the stage of exhaustion (S.E.), when resistance drops to below normal again.<sup>12</sup> A diagram of how this applies to corticoid production is contained in Appendix B.

This is a particularly powerful idea. If some method could be found to shorten the amount of time needed to pass through the A.R. phase, or increase the time to onset of the S.E. phase, its usefulness would be obvious. Coping techniques are available to assist in this type of adaptation to stressors. Development of these coping techniques will be discussed in Chapter V.

### BATTLE STRESS

The body's reaction to stressors on the battlefield are no different than its reaction to stress at any other time. However, the environment of combat magnifies the consequences of stress effects. Additional anxieties and fears, not common in everyday life, now come to the fore. These include: fear of the unknown and unexpected, fear of mutilation or death, and fear of

physical or psychological separation from the primary group.<sup>13</sup> Also, when a man in combat undergoes a stress reaction, physical activity, which is the only method to metabolize the various hormones produced by the body under stress, may not be possible. In fact, movement could result in the man's death. This limitation only exacerbates and magnifies a person's building anxieties, and hence, stress levels.

When a leader experiences an overwhelming level of stress, he is unable to think clearly and may make faulty decisions. In the battlefield environment poor decisions result in unnecessary deaths and lost battles.

Table 3 lists the Army's published effects of prolonged combat on a soldier's performance. As will be noted, each manifestation of prolonged combat, which may be read as stress, lowers the effected person's performance and fighting effectiveness.

TABLE 3. EFFECTS OF PROLONGED COMBAT DUE TO BATTLE STRESS.<sup>14</sup>

Decreased vigilance	Slowed comprehension
Reduced attention	Slowed responses
Slowed perception	Increased omission
Misperceptions	Encoding/decoding difficulties
Inability to concentrate	Fuzzy reasoning
Faulty memory	Communication difficulties
Mood changes	

The effects listed are caused by a combination of both stress and fatigue. As will be discussed in Chapter IV, these two factors cannot be separated, since they form a synergistically coupled pair.

It should now be obvious that the deleterious effects of stress apply to the effective functioning of a leader as well as a soldier. With few exceptions, however, past research and discussion has not dealt with the plight of the senior leader. This is unfortunate, since campaigns and battles are planned by the senior officers. If decisions made by the task force or corps commander are flawed, the battle may be lost. Decisions that are made must be the right ones from the most senior to the most junior officer. Several historical examples will serve to reinforce this point.

During the Boer War, the British Commander-in-Chief, General Buller, is described by Dixon in his book, On the Psychology of Military Incompetence, as "Irresolute from the outset, the three defeats at Magersfontein, Stormberg Junction and Colenso sapped whatever confidence he ever had. From being weak and fearful he became a veritable jelly of indecision. His plans became vague and indefinite, and his specific orders scarcely more enlightening. His lack of moral courage in the face of adversity revealed itself most clearly in his propensity for making scapegoats of his unfortunate subordinates..." This stress-caused indecision lead to an even worse defeat at Spion Kop, which, in magnitude of military disasters, is on the footing with the charge of the Light Brigade during the Crimean War. Dixon surmises that it is resistance to the deleterious effects of stress on decision-making, which allows a general to carry on when things go wrong, that separates a good general from a poor one.<sup>15</sup>

This theme was echoed by Field-Marshal Slim in his autobiography, Unofficial History. He admitted, that under the immense pressure he felt while occupying Gallabat during his siege of Metemma, that he made a flawed decision and withdrew based on self-doubt. He says "I had by then let the catalogue of dangers make me question my own judgment... I weakened; I gave way. Yet I was unhappy, not because I had allowed myself to be persuaded-I have little use for the what-I-have-said school of commander-but because somewhere at the back of my mind was still the insistent, nagging thought, 'But I was right!' Sadly, I decided to withdraw from Gallabat. My bitterest pill, however came about ten days after our withdrawal when I saw for the first time some intercepted and deciphered signals, sent from Metemma just after our capture of Gallabat, which showed that the enemy was-or thought he was-at his last gasp. If only I had followed my hunch! But I did not. I had taken counsel of my fears."<sup>16</sup>

One last, and more recent, example illustrates how the combined effects of stress and mental fatigue may cripple even a supreme commander. The case of General Yitzak Rabin, during the 1967 Arab-Israeli War, serves as a warning. Dr. Hugh L'Etang cited the following:

"General Rabin, Israeli Chief of Staff in 1967, was notified of the Egyptian alert on 14 May. He began working a 20 hour day, making all decisions himself. (At any rate, he thought all decisions were being passed to him.) By 21 May he was stammering, incoherent, and smoking 70 cigarettes a day. By 23 May, his behavior was like that of a speechless man in a trance. Finally he collapsed and wanted to resign."<sup>17</sup>

Fortunately wiser counsel prevailed. Rabin was given a sedative, slept for 24 hours and was revitalized.<sup>18</sup> He went on to conduct a superb series of operations which brought the conflict to a rapid end. History may have turned out differently had the Arabs attacked while Rabin was operating at a state of reduced effectiveness.

While history is replete with examples of poor decisions being made under the extreme stress of combat, the three events above serve to show that leaders must develop a personal system of coping in order to minimize the effects of stress on their decision-making abilities.

The next step toward the goal of designing a training system for senior leaders which will help minimize the effects of stress is to determine the factors which most affect a leader, given the type of tasks he must perform. These factors are defined and discussed in Chapter IV.

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COMBAT STRESS AND THE SENIOR LEADER:  
A TRAINING PROGRAM TO MINIMIZE ITS EFFECTS

CHAPTER IV

FACTORS CONTRIBUTING TO BATTLE STRESS  
IN THE SENIOR LEADER

With the ever-increasing technological advancements being made in the production of weapons and in the solving of logistical problems, the tempo of warfare is increasing. It is becoming more and more evident that the human organism is one of the primary limiting factors in determining the success or failure of a military operation.

A Study of Combat Stress:  
Korea 1952<sup>1</sup>

If the human organism was recognized to be the limiting factor in 1952, think of the problems associated with the current battlefield, which has been characterized as much more lethal, fast paced, and continuous. In order to discover how to extend and expand human abilities to meet the challenge of the current or future battlefield, the major stressors experienced during combat must be determined.

The major causes of stress listed in Figure 2, page 17 can be grouped into four general categories for the purposes of this paper. They are:

1. fear of physical or psychological isolation;
2. fear of the unexpected and the unknown;
3. fear of self and others being mutilated; and

#### 4. physical deprivations or over-stimulations.<sup>2</sup>

These categories cover the stressors of battle which affect everyone. Since this paper is focusing on battle stress as it affects the senior leader, if any category could be found which affected the leader more than the other categories, then attention and resources could be spent on it to produce the most profound results in the most economical manner.

The importance of group integration is less important to the leader than to the soldier. The leader can not integrate fully into the group he leads for two reasons. First, a leader's duties require that he spend a significant portion of his time away from the group. Less contact necessarily leads to less intimacy and reliance on group support. Second, if a leader becomes fully integrated into a group he is required to lead, he could be swayed by group norms, thoughts, and ideas. This would limit his decision options and behavioral requirements, affecting his intellectual ability to make right decisions.<sup>3</sup> His effectiveness and proficiency as a leader would be degraded. It is for this very reason military norms and regulations are designed to prevent a leader from becoming fully integrated into the group he leads. A simple, but illustrative, example would be that an officer addresses an enlistedman by his rank and last name only. An enlisted man's first name is never used, since its use is associated with some intimacy.

While not being strongly affected by fear of isolation from the group he is leading, the leader still requires the support of others. This is usually accomplished through a support network

composed of contemporaries or a small number of close associates from prior years, outside the leader's current organization. These informal support networks are built up on an individual and personal basis, and do not lend themselves to being formalized in the institutional system being pursued in this paper.

Fear of the unexpected and unknown affects everyone in combat. While this is a normal feeling, it becomes debilitating if taken to extremes. This fear is based on the perception that anything unexpected or unknown is threatening. This fear is based on the emotional responses discussed in Chapter III. The senior leader must think to the future and constantly weigh possibilities. This affords the opportunity to postulate how events will turn out. It also gives him the opportunity to let his fears and emotions get out of hand. Hypothesizing in this manner could cause perceptions of the worst case to become reality. Remember that how events or things are perceived is the most important factor in determining stress levels experienced. Here is the first area which may affect a leader's decision making abilities to a great extent. Several of the coping techniques discussed in Chapter V focus on changing perceptions of events.

The third general area, fear of mutilation or death, while affecting everyone tends to affect the leader less than the soldier. Leaders are normally better informed of the situation and are more easily able to rationalize the fear of mutilation or death away.<sup>4</sup> In addition, most senior leaders remain removed from actual combat areas and are, in fact, less threatened by

mutilation and/or death. In-depth study in this area probably would not yield significant results.

Researchers have long held that the fourth category, physical deprivations or over-stimulations, created the most stress, and hence has the most effect on vigilance and decision-making tasks.<sup>5</sup> This is the second area which could yield a large payback if incorporated into a training program, and will be the first investigated.

#### SLEEP LOSS AND CIRCADIAN RHYTHM SHIFTS

A large body of research on the effects of sleep loss and circadian rhythm disruption has been developed by both military and civilian institutions. Sleep loss has been found to degrade logical reasoning ability<sup>6</sup>, decrease visual perception<sup>7</sup> and memory<sup>8</sup>, and increase fatigue<sup>9</sup>. These factors lead to a decrement in both cognitive and psychomotor tasks<sup>10</sup> - the very tasks which make up the bulk of the leader's work.

If sleep loss is so detrimental to the effective performance of a leader, why doesn't a leader ensure he gets enough sleep (usually defined as a minimum of 4 to 5 hours undisturbed)? The military officer is trained to be tough, to have the "can do" spirit. This brings on a macho image of self. He believes that exhaustion and fatigue are for weaklings. He therefore believes that he won't be affected by sleep loss. A second reason which causes sleep loss for the leader are the habits learned during peacetime constraints. The leader feels that every event requires his presence to ensure it goes right.

For whatever reason, he is either unwilling or unable to delegate authority to subordinates. So, during lulls, when he could and should sleep, the leader remains on post. When he finally realizes his abilities are degraded it's too late, his decisions are flawed. Fortunately, or unfortunately, in peacetime exercises, which last 2-3 days, this is not critical. However, an old military saying says "You fight like you train." During actual combat a leader's degraded performance could mean not only the loss of his own life, but the lives of his subordinates and lost battles.

Circadian rhythms have another effect which the leader must remember. Because of these biological cycles, everyone's performance level changes throughout a 24 hour period. In fact, virtually everyone has a low point in performance between 2 and 4 in the morning and a high between 2 and 4 in the afternoon. This is superimposed on any other stressor effects, and becomes important in a discussion of nap-taking strategies.<sup>11</sup>

#### THE FOG OF WAR

Decision-making while under the extreme stresses of combat requires split second decisions to be made with little information. Many things are happening at the same time, the environment is noisy, and everyone wants your attention or a decision to be made. This environment is characterized as one of volatility, uncertainty, complexity, and ambiguity. This is the area which causes perceptions to be formed about events and things. Constantly weighing on the leader is the thought that

his ability to make proper decisions may be flawed, that men may be killed unnecessarily, and the battle may be lost.

All of these factors are stressors which may lead to a general feeling of anxiety and heightened reactivity. These responses may degrade the mind's ability to think clearly and logically. If a leader is unaware of this reaction, or hasn't developed the ability to cope with the stressors, he may make faulty decisions. These psychological stressors coupled with the physiological stressors of heat, humidity, lack of proper nutrition, sleep loss, and fatigue will degrade the leader's effectiveness over time. The leader must develop coping abilities through use of some technique or system in order to minimize the effects of these stressors for as long as possible. The techniques available to accomplish this will be studied in Chapter V. Then, in Chapter VI, a system will be developed which integrates these techniques into formal classroom training and field exercises.

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CHAPTER V

METHODS OF COPING

My blood pressure went down ten points. My wife said my disposition improved, and minor stresses and strains of life around Washington didn't bother me anymore.

MGEN Franklin M. Davis, former  
Commandant of the U.S. Army War  
College on Transcendental  
Meditation<sup>1</sup>

THE IMPORTANCE OF PRIOR TRAINING

Before exploring the various methods which have been developed to cope with the stress reaction and stressors described in Chapters III and IV, the necessity of starting any technique well before anticipated combat must be emphasized. According to Selye, the way to minimize the negative effects of stressors is "...by strengthening the body's own defenses..."<sup>2</sup> This strengthening takes time. If the techniques described below are not developed and practiced as part of a daily routine they will not be effective. As will be discussed in Chapter VI, in order for a training system to be effective it must be institutionalized. Once institutionalized, the training system becomes legitimized and will be of long term value.

## TECHNIQUES

The techniques which will be described and discussed fall into two general categories. The first group works toward minimizing the frequency of the stress response, while the second group helps to minimize the intensity of the stress response and reduce emotional reactivity. These techniques are summarized in Table 4.<sup>3</sup> Each will be described briefly, to include both the method of use and benefits to be derived from them.

TABLE 4. TECHNIQUES FOR THE CONTROL OF STRESS.

1. Techniques to minimize the frequency of the stress response
  - a. Social engineering
  - b. Personality engineering
2. Techniques to minimize the intensity of the stress response and reduce emotional reactivity.
  - a. Exercise
  - b. Breathing and muscle relaxation
  - c. Biofeedback
  - d. Stress inoculation
  - e. Meditation

### Social Engineering.

Our environment is filled with stressors. One of the easiest and most effective techniques of stress management is to identify stress-promoting activities and develop a life-style which modifies or avoids these stressors.<sup>4</sup> While this seems simplistic, it is a very powerful method. A list of social engineering strategies proposed by Girdano and Everl" is contained in Appendix C. Even in battle there are many circumstances which may be modified or avoided. Two social

engineering strategies which are applicable particularly to the military are delegation and sleep management. They are briefly covered below.

A. Delegation. Leaders must learn to delegate. This is an age-old military axiom. One man can't run every detail of an operation. A staff is designed to screen the leader from the burden of day-to-day requirements and allow him time to keep the overall mission and goals of the organization in perspective. This also allows the leader time to think, sort out priorities, and plan with no distractions.

Delegation is specifically discussed because the ability to delegate needs reinforcing in many senior military leaders. For whatever the reason, many leaders are unwilling or unable to delegate responsibilities to their subordinates. This not only undermines the leaders ability to maintain enough time for his own tasks, but works as a demotivator for his subordinates. This trap turns into a self-fulfilling prophesy, since the less the leader allows subordinates to take on, the less the subordinates are able to take on. The slow spiral toward incompetence only reinforces the leader's original thoughts on delegation. The ability to delegate must be taught and practiced at every opportunity.

B. Sleep Management. While this is a strategy of social engineering, the importance of sleep loss and deprivation, believed by many researchers to be the primary cause of degraded performance during continuous operations<sup>5</sup>, cannot be overemphasized. Therefore, it must be discussed in some depth.

The areas of sleep deprivation, loss, and changes in circadian rhythms has been of particular interest to the Navy, since being at sea, whether during combat operations or normal peacetime steaming, can be considered sustained operations. Long before the subject of sleep loss and circadian effects were studied scientifically, it was recognized that crew watch rotation schedules make a significant difference on day to day performance. Shipboard routine has been established around the most effective schedule found through trial and error. Because of its vital interest to every ship's crew, most of the research conducted on sleep loss and sleep schedules has been done under the auspices of the Naval Health Research Center in San Diego, California.

Why should sleep loss be a problem for the leader/commander? Can't he set up a rotation schedule with his second-in-command to ensure he gets enough sleep to be effective for prolonged periods? Why should we worry about sleep loss anyway?

In addressing the first issue, a workable rotation schedule can be set up very easily in most circumstances. But commanders are very unlikely to do so and the reasons need to be explored. As alluded to during the previous discussion on delegation, the mores and social norms instilled into young officers do not allow most commanders to feel free to sleep while the men of their command are working. The feelings, however, go much deeper. Much of the hesitancy to relinquish control hinges on the commander's image of himself, or rather what he perceives he should be. Thus, the macho image normally portrayed, the "can

do" attitude, the "I can take it" feelings don't allow the commander to delegate functions and duties of command since that would be tantamount to admitting he wasn't a strong leader, and could be easily replaced. This somehow lowers the commander's feeling of self worth, and is the biggest obstacle to be overcome. Training must center around this psychological aspect of "sleeping on the job." It is vital to remaining effective during sustained operations.

Sleep loss and circadian rhythm changes cause numerous problems which degrade effectiveness and efficiency in vigilance and decision-making tasks. One of the few studies of sleep during combat conditions documented the effects of fragmented sleep. Sleeping patterns of carrier pilots on duty stations off Vietnam were studied.<sup>6</sup> The more variable a pilot's intersleep interval, the more likely he was to make a landing error. Table 5 summarizes the symptoms of sleep loss.

TABLE 5. SYMPTOMS OF SLEEP LOSS.<sup>7</sup>

- A. Mood and Motivational changes.
- B. Visual illusion/hallucination
- C. Failure to complete routine tasks
- D. Shortened attention span
- E. Short term memory loss
- F. Variable and slowed response times
- G. Impaired test performance, increased errors of omission
- H. Lack of insights or impaired behavior
- I. Failed verbal communications.
- J. Extreme fatigue

Most of these manifestations of sleep loss are due to an increase in number of "microsleeps" which a person experiences. These "microsleeps", or brief (micro-seconds to seconds) losses

of consciousness, are considered phase 1 sleep; and, the subject will rapidly proceed to stage 2 sleep if not aroused. Normally the individual is immediately aroused and "remains awake."

Sleep management is concerned with how to prevent and cope with deteriorating performance, poor moods, and lowered willingness-to-work caused by lack of sleep. Sleep management proponents might seek to devise work/rest-sleep plans, increase unit awareness of sleep loss symptoms, and attempt to overcome degradation by use of performance aids and job re-allocation techniques.<sup>8</sup>

#### Personality Engineering.

As previously mentioned, Selye and most stress researchers believe that perception of events and circumstances play a major part in determining what event is stressful to an individual. Perception is based on the values, attributes, and behavior of an individual. These three factors make up what is known as personality. Personality engineering strategies are designed to change these characteristics so that events and circumstances are perceived as being less stressful. While the changing of personality traits is easier said than done, the strategies used in this technique are the most powerful stress reducers known.<sup>9</sup> Personality engineering strategies proposed by Girdano and Everly are listed in Appendix D.

#### Exercise.

Physical activity has long been recognized as a way to relieve stress. To reiterate, the general stress reaction

involves the release of several different chemical substances (adrenalin and noradrenalin for example) into the blood stream to increase the bodies reactivity and make it ready for either fight or flight. Both of these action responses involve physical activity. The only way the body brings itself back to some lower state of reactivity or excitation is by ridding itself of these chemicals. This can be accomplished by metabolizing them two ways, either over a long period of time or more quickly through physical activity, which enhances the metabolic process. This makes sense since the original intent of the stress response was to prepare the body for some physical activity to fend off a physical threat.

Exercising stresses the body. The chemicals of the stress reaction are produced, allowing the body to prepare itself for sustained activity. In this case, the activity is performed and the chemicals are metabolized. The long term effect is the body develops the ability to more efficiently metabolize these chemicals. Therefore, in a stressful situation where physical activity is not possible, the body will metabolize the circulating chemicals more quickly because the body is accustomed to the particular metabolic pathway. The result is a lower general stress level of the body.

In addition to the physiological benefits of exercise, there are psychological benefits. When you look good you tend to feel good about yourself. This affects your general outlook on life, which will color the way you perceive events around you. The more positive your general demeanor, the more positively you

view events, and the less stress you will feel.<sup>10</sup>

Exercise is a very basic and simple way to lower your general stress level. Therefore it should be one of the cornerstones of any stress reduction/coping program.

### Breathing and Muscle Relaxation

Breathing is normally considered an involuntary, automatic function. It usually requires no thought and directly reflects our general state of stress arousal. Breathing can also be voluntarily manipulated and regulated. For example, a weight lifter inhales and exhales in a specific manner when lifting weights. This simple technique enhances his ability to lift a greater amount. The voluntary regulation of breathing can also be used to reduce a state of arousal.

Breathing centers in the brain are linked to the arousal centers. Constant, steady breathing promotes relaxation. For example, this technique is used by shooters in order to steady themselves. Through conscious control, breathing can be conditioned. Because of the close linkage between the breathing center and stress response control centers in the brain, the nervous system itself will be conditioned and become more tranquil. This will lower your level of reactivity and anxiety, allowing sounder decision-making.<sup>11</sup>

Muscle relaxation techniques work in much the same manner. Muscle tension can both a stressor and response to a stressor. Neuromuscular exercises, or progressive relaxation, seeks to gain increased control over skeletal muscles in order to induce very low levels of tension in the major muscle groups, such as the



arms and legs. This technique is practiced while lying down in a very quiet room and becoming sensitive to even the most minute tension in muscles. Due to neural connections similar to those described for breathing control, reducing the manifestations of the body's stress reaction, will reduce your actual reactive state.<sup>12</sup> Once trained in this technique, it may be used as a biofeedback mechanism, which is the next technique.

### Biofeedback

If you have felt the increase in heart rate, breathing rate, or any of the other changes described in Chapter III, you have experienced the basic information needed for biofeedback. The primary ingredient is self-knowledge. Biofeedback is a reconditioning process which seeks to influence mind and body processes through thought. One major thrust is to lower the reactivity of the nervous system. By desensitizing the nervous system you willfully lower one or more physical manifestations of the stress reaction and become more a less reactive and more tranquil person. Through this method "One experiences thought which is clear of imagination and anticipation, allowing greater concentration, and often revealing insights and creativity heretofore subdued by self doubt."<sup>13</sup>

The second portion of biofeedback involves muscle tension and relaxation. Dr. Edmund Jacobson theorized that anxiety and relaxed muscles were incompatible. Therefore, to reduce anxiety muscle tension had to be reduced. The technique has been previously described.<sup>14</sup>

### Stress Inoculation

This technique, also called stress-training by some military writers,<sup>15</sup> has been used extensively in the past. It is based on a cognitive psychological model which states most of what humans do can be accounted for by what we chose to do either consciously or subconsciously. Freud believed that psychological problems due to stress were "...produced by stimulation of such magnitude it breaches a hypothetical barrier which normally protects the brain from overstimulation." He went on to say that surprise, in addition to intensity, was an important parameter in crossing the barrier. Therefore, anticipating anxiety is adaptive because it helps to prevent surprise.<sup>16</sup>

These thoughts reinforce the discussion of Selye's G.A.S. described in Chapter III. Any methods which tends to shorten the alarm reaction phase will allow the individual to reach the stress resistance phase more quickly. The result is adaptive coping.

In reviewing the effects of repetitive exposure to complex threatening stimuli, such as combat, Rachman found either habituation or sensitization occurred, depending on the intensity of the combat.<sup>17</sup> Studies dealing with the mastery of fear in sport parachutists observed that an active coping process took place with experience and confidence building. The adaptive process resulted in stress levels which charted an inverted "V". This meant that the veteran parachutists demonstrated increased levels of stress well before the actual jump, and after it was over, but were able to calm themselves (i.e.-lower their level of

stress) just prior to and during the actual jump. This process involved careful pacing of arousal and enabled them to make clear and logical decisions during the crucial phase of the jump.<sup>18</sup> This led to the conclusion that stressors in large doses (i.e.-an all or nothing type of stressor) would cause an avoidance reaction which is non-adaptive, while stressors introduced in small, ever-increasing doses would lead to adaptive coping and behavior. The Yerkes-Dodson Law describes the relationship between stress and performance levels and is summarized in Table 6.

TABLE 6. THE YERKES-DODSON LAW.<sup>19</sup>

- 1) The relationship of performance to arousal is an inverted "V",
- 2) The optimum level of arousal is different for each task - the more complex or abstract, the lower the arousal needed for optimum performance, and
- 3) The more overlearned a task is (eg- performance has become habit), the more resistant it is to interference from high levels of arousal.

The adaptive skills acquired are of two types: instrumental, which are actions to meet environmental demands or alter the stress producing situation, and palliative, which are responses developed to adapt when the stress producing situations are unavoidable. The latter include the social engineering strategies of perspective taking, attention diversion, and social support networks. It has also been found that the most adaptive coping takes place in a very flexible framework.

Therefore what stress inoculation attempts to do is present

a series of stress producing situations of ever increasing complexity to a individual in order to allow successful coping. Based on these successful coping experiences he is more prone to feel able to cope with any similar situation, and he feels more in control of events and tends to be less surprised. Done properly, the individual builds a flexible framework of coping techniques, which can be generalized to any number of situation types.<sup>20</sup>

### Drugs

Use of pharmacological agents has centered on two areas: sleeping aids to promote rapid sleep onset and permit efficient utilization of rest periods, and the administration of carefully chosen stimulants to maintain alertness and performance effectiveness when there is no opportunity for sleep.

The most promising sleep promoting agent is L-tryptophan, an amino acid regularly ingested in the diet as a constituent of protein foods. L-tryptophan shows a diurnal blood plasma pattern and may be a physiological regulator of sleep onset. Research has demonstrated L-tryptophan to be effective in promoting rapid sleep onset and causes a significant reduction (46%) in sleep latency, the post-sleep period of reduced performance. The effects were evident immediately in subjects who were "good" to "average" sleepers, and took approximately four days to become effective for "poor" sleepers. While no side effects are known, the plasma half-life of L-tryptophan is 2.7 hours, indicating any adverse performance effects associated with it might be short-lived.

Trying to find stimulants which may be used to enhance alertness and performance when sleep is impossible has been more difficult. In the past, amphetamines were used in this role. However, the side effects, which are well known, are undesirable in operations which may stretch from several days to weeks. New non-amphetamine stimulants have been developed, such as peptides and xanthines, which may be useful to military operations. They are being tested, but results are not yet available. Currently, therefore, no suitable drug to maintain alertness and performance has been identified.<sup>21</sup>

### Meditation

Throughout the ages, both eastern and western writings have described the existence of an innate human capability which Benson calls "the relaxation response." He believes that most psychological and physiological problems stem from four factors: inappropriate diet, lack of exercise, family disposition, and environmental stress. Further, he believed the autonomic nervous system, which produces the stress reaction has a counterpart system that tends to relax the body instead of enervating it.<sup>22</sup>

While various techniques will elicit the relaxation response, Benson's group at Harvard used Transcendental Meditation, as practiced by followers of Maharishi Mahesh Yogi, to determine whether humans could control their autonomic nervous system, as suggested in previous work by Miller. They found that meditation produced results which were exactly opposite to those which are observed during times of increased stress. Specifically, there was a marked decrease in oxygen consumption,

indicating a lower metabolic rate, a decrease in heart rate, breathing rate, and blood lactate percentage. Blood lactate is a metabolite of skeletal muscle activity. Lower blood lactate percentages is associated with less tense muscles and lower states of anxiety.<sup>23</sup>

Meditation leads to an altered state of consciousness. More simply put, it departs from our normal planning-doing state of thinking to a selfless state of feeling. During this process the environment is perceived as non-threatening. Impressions don't have to be made and there is no threat to feelings or ego outside entities. While these other states of mind are just as natural as the state we normally operate in, we are not taught to use them and, therefore, have difficulty understanding the concept.<sup>24</sup>

Meditation can be divided into four basic steps. First, is a quiet environment. This step tries to minimize external stimulation. It must be noted, however, that this is not required by everyone. People have been known to meditate in the middle of crowds, on trains, and so on. The second step involves selecting an object to dwell on. This helps clear the mind and allows the mind to remain clear by refocusing on it if thoughts come into the mind. Benson recommends the number one. One is repeated either orally or in the mind only. The third, and most critical, step is to maintain a passive attitude toward thoughts. An attempt is made to empty the mind of all thoughts and distractions. Last, a comfortable position must be used. Again, this is a matter of preference, although sitting is recommended

since this position is maintained for the entire 20 minute session. One point made by Benson is that it is as important to learn when not to use this technique as it is to learn when to use it.<sup>25</sup> For example, he states specifically that meditation is not a substitute for sleep, and discusses his reason for that conclusions in detail.<sup>26</sup>

#### THE HOLISTIC APPROACH

It should be obvious that none of the techniques discussed are sufficient, individually, to cover every type of stressor on the battlefield. What must be developed is an approach which will attack the problem of stress in all phases. That is, an approach must be developed which allows the leader to:

1. change or minimize the stressor or environment which causes the stressor,
2. change his or her perception of the stressor, and
3. alleviate the effects of the general stress reaction.

If a system of techniques could be developed to accomplish these three things, the leader would be armed with a powerful tool which will minimize the degrading effects of stress on his decision-making abilities, mood, and general ability to lead effectively.

There is such a system already developed - the holistic approach. The normal western view of a person treats mind, body, and spirit as separate entities. For example, most doctors treat physical symptoms, psychiatrists and psychologists deal with psychiatric symptoms, and religion covers spiritual needs. The

holistic approach views mind and body as one entity, and therefore attempts to integrate all the methods discussed along with diet, into one system tailored to the individual.<sup>27-28</sup> The system can be divided into three phases described in Table 7 along with the recommended techniques.

TABLE 7. THE HOLISTIC APPROACH.<sup>29</sup>

PHASE I

- A. Purpose: To quiet one's external environment so as to reduce the stimulation on conscious and subconscious functioning.
- B. Effect:
  - 1. Produces a cognitive awareness of life events and lifestyles.
  - 2. Cognitively restructures environment, thought patterns, and behavior.
- C. Techniques:
  - 1. Social engineering.
  - 2. Personality engineering.

PHASE II

- A. Purpose: To quiet one's internal environment in order to reduce the sensory stimulation of one's central nervous system.
- B. Effect:
  - 1. Produces a calming or relaxation response.
  - 2. Conditions the relaxation response.
- C. Techniques:
  - 1. Breathing
  - 2. Muscle relaxation
  - 3. Biofeedback
  - 4. Physical exercise

PHASE III

- A. Purpose: To condition one's mind to reduce arousing thought and increase peaceful thoughts.
- B. Effects:
  - 1. Reduces "mind chatter," arousing memories, and anticipations.
  - 2. Directs thought to produce peace and tranquility.
- C. Techniques:
  - 1. Meditation



A coping system will be developed in the next chapter for the senior military officer, using this model as a framework.

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4. Ibid., p. 14
5. Interview with Theodore L. Baker, Ph.D, Director of Research and Development, Circadian Technologies, Inc., Boston, February 2, 1988.
6. Paul Naitoh, et al., Sleep Management In Sustained Operations User's Guide, p. 8-13.
7. Johnson, p. 112.
8. Naitoh, et al., Sleep Management in Sustained Operations User's Guide, p. 8.
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10. King, M.G., et. al., "Stress, Combat and Tactical Decisions," Defense Force Journal, January/February 1984, p. 14.
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12. Girdano and Everly, p. 139.
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19. Donald Meichenbaum and Roy Cameron, "Stress Inoculation Training: Toward a General Paradigm for Training Coping Skills," in Stress Reduction and Prevention, ed. by Donald Meichenbaum and Matt E. Jaremko, p. 121.
20. Herbert Benson, the Relaxation Response, pp. 1-27.
21. Cheryl L Spinweber and Laverne C. Johnson, Psychopharmacological Techniques for Optimizing Human Performance, pp. 2,3,12-14.
22. Girdano and Everly, pp. 92-93.
23. Ibid., pp. 207-208.
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26. Laverne C. Johnson, "Sleep Deprivation and Performance," in Biological Rhythms, Sleep, and Performance, ed. by Wilse B. Webb, p. 131.
27. Girdano and Everly, pp. xiii-xv.
28. Kenneth R. Pelletier, Mind as Healer, Mind as Slayer, pp. 301-322.
29. Girdano and Everly, p. xiv.

COMBAT STRESS AND THE SENIOR LEADER:  
A TRAINING PROGRAM TO MINIMIZE ITS EFFECTS

CHAPTER VI

SUGGESTIONS FOR A MILITARIZED COPING SYSTEM

One of the ultimate goals of studies of stress, therefore, is to evaluate the effectiveness of various kinds of leadership, or training, in lessening the stressing experiences of combat. It would also be desirable to evaluate the condition of men so that their immediate future effectiveness can be better predicted.

A Study of Combat Stress:  
Korea 1952<sup>1</sup>

INTRODUCTION

Having discussed the need for commanders to develop coping mechanisms in order to deal with combat stress and described the framework and techniques available for use in developing coping skills, this chapter will discuss and detail a training system designed to span the entire career path of a military officer.

In order for a coping system to be effective in a military setting it must meet four criteria. The system must be (1) individualized, (2) progressive, (3) used routinely by the individual, and (4) must be compatible with the specific needs and realities of military life, which include both peacetime and combat duties. The system proposed in this chapter is designed

around these four requirements.

#### A TRAINING MODEL

The proposed coping system involves formal education during four stages of career development, from initial officer candidate indoctrination training through senior service schools. This formal training and review should take place approximately every six years, which corresponds to normal career-path major education points. The specific career points and corresponding current military education are listed in Table 8.

TABLE 8. OUTLINE OF THE PROPOSED TRAINING PROGRAM.

<u>Training Level</u>	<u>Career point</u>	<u>Current school</u>
Officer candidate indoctrination	Pre-commissioning	Military academy, OCS, ROTC
Intermediate level 1	6th year	Functional schools, Navy-Department Head School Army-Branch Advanced Course
Intermediate level 2	12th-14th year	Staff College
Senior Level	18th-20th year	Senior Service College

When considering a training program, two important points from the stress literature must be kept in mind. First, under the guidance of a skilled professional, individuals must determine their own requirement for coping mechanisms, evaluate a range of strategies, and retain those which are found most useful. Therefore, any training program must encourage self-development and self-evaluation. Second, as described by Selye's G.A.S. model and Yerkes-Dodson Law, exposure to stress up to the

point where it is still having a positive effect on productivity, not only maximizes productivity, but can also improve the individual's tolerance for stress.<sup>2</sup>

The selection process for entry into the officer corps ensures that, at a gross level, those accepted have developed a reasonably sound set of personal stress coping strategies. However, the stressful situations encountered up to that point have been relatively low level and of limited scope. Therefore, the coping strategies which the officer candidate possesses are relatively immature and untested. This base must be broadened by exposure to a range of stress producing experiences and made flexible by increasing the range of options available as possible coping strategies during the four stages of the program.<sup>3</sup>

#### The Indoctrination Training Phase

The emphasis during this phase should be on ensuring each officer candidate becomes knowledgeable about what stressors are, how the body reacts to stressors, how stress effects decision-making, personality, and health, and introduce the various coping mechanisms available. This phase would also mark the first time each individual receives a personal stress inventory. Because this stress inventory would become part of the officer's official health record and could affect his career opportunities and advancement, the instrument used must be selected with great care. It must have broad applicability and be established as valid and verifiable. The same stress inventory will be given and recorded during each phase training and at each regularly required physical throughout an officer's career. This phase

will also introduce the officer candidate to the benefits of physical fitness, nutrition, and sleep as they pertain to decision-making and stress reduction.

In addition to the classroom training, this phase will also introduce the officer candidate to a series of standardized stress tolerance exercises, which would be designed to test the individual's coping strategies. These exercises, designed to simulate real-world events, would have two purposes. First, as stress inoculation tools, they would provide the individual with feedback on the viability and effectiveness of his coping skills. This must be done in a positive manner, emphasizing self evaluation as the way to continued self-development of coping strategies. Second, they would provide career managers another measure of stress tolerance which could be used to evaluate the officer's ability to perform under stressful conditions during his career.

#### Intermediate Level 1

The second formal training level would take place at about the sixth year of commissioned service, during the various mid-grade functional schools normally attended at this point in career progression. At this point most of the officers have finished their initial obligated service and the ones that remain will most likely stay on for a career. The officer now has some real-world experience which he can use to evaluate, refine, and expand his coping skills. The emphasis will be on continued training at the tactical level, started during the indoctrination phase. Again, the stress inventory will be given at the

beginning of the instruction for the officer's use, and at the completion of training for continued monitoring. While officers at this stage of their careers are still working in the concrete here and now, training will continue to build on the experience gained over the last six years and introduce stress inoculation exercises which become more complex and ambiguous in nature. These exercises will include practical experience with sleep loss and its effects on decision-making.

Leaders must be able to evaluate their subordinates' reactions to stress as well as their own. This level will introduce mutual observation, discussion, and evaluation as well as further stress related information, such as the way life events can influence individuals and place them at a higher than normal susceptibility to stressors. An example of this type of information would be the Holmes and Rahe Social Readjustment rating scale, which indicates the relative severity of impact various life events can have on an individual.

#### Intermediate Level 2

Training during this level would take place at the Staff College level, such as the Command and General Staff Colleges in Norfolk, VA., or Fort Leavenworth, KS.

Most officers would be in their mid-30's. After completion of this level of military education most officers will be going to staff officer tours. For many, the staff tour will be followed by an O-5 command. Therefore, this level of stress training will emphasize the stressors of command and further develop coping techniques which will continue to increase

flexibility.

In addition to the standard battery of stress indicators, and instruction on physical fitness and nutrition, this level introduces the first of two major physical examinations, the study of personality traits and behavior, and gears the stress inoculation exercises toward both staff work and command.

While physical examinations are required periodically during a career, the physical examination proposed here would be much more comprehensive. In addition to the usual tests, interviews, and x-rays it would include a treadmill test, body fat determination, and strength tests. When this is coupled with personality type information, also obtained during this phase, an excellent picture of general health and coping abilities can be developed. This will aid self-evaluation and further development. This is the stage in which social engineering and personality engineering will be reintroduced, since after 12 to 14 years on the job some stereotyped responses will have developed. These will be brought to the individual's attention to assist him or her in making changes for more effective coping behavior.

#### Senior Level

While stress surveys continue to be used and recorded during each yearly physical, senior level training would mark the last formal instruction and evaluation of the officer's stress management program. This would take place while attending a senior service college course, usually after a command tour, at the 18 to 20 year mark in a career. Most officers at this phase



of training are about 40 years old.

The major emphasis of this final level of training will be to prepare the officer for positions of responsibility which will require decisions in an environment of uncertainty and complexity and will necessitate a broad perspective at the highest levels of political as well as military subjects. Also, health considerations begin to come more heavily into play during planning. The second of two major physicals is administered. It will be identical to the physical given during the intermediate level 2 training. The Army War College is currently using a physical of this type. Each year 2-3 students (senior officers) are identified as having significant health problems and require major medical care (most involve the cardio-vascular system). Findings from the physical will help determine which officers are no longer fit for major battlefield commands. It also gives the officers involved a new lease on life and allows the officer to continue his productive career in another, less demanding environment.

The second area which must be addressed is a continued appraisal of personality types. For example, it has been long held that "Type A" personalities are more prone to medical problems than "Type B's." If the rest of the training program is working, most of the officers at this level will not have to worry about this. However, for the few that have not made the life-style change, this phase would be the time to make the adjustments.

Last, the stress inoculation exercises will continue. At

the senior command level the scenarios and situations must be even less structured than during the last level. The exercises must include both operational level of war scenarios, with emphasis on theater warfare, as well as national strategic planning and crisis response situations designed to approach real-world pressures and decisions.

In summary, the proposed stress reduction/decision-making training would be a comprehensive system built upon two interlocking programs; a progressive program built on developing increased levels of tolerance to stressful situations and a program designed to increase knowledge of stressors acting on the officer at specific points in a career path. At the same time, coping techniques would be introduced and developed to allow self-evaluation and growth, thereby keeping each individual program of strategies dynamic and effective.

#### CONTINUITY WITH FIELD TRAINING

This proposed training program represents one side of a two sided problem. In order for the formal presentation and personal systems which evolve from this system to be truly effective, the individual must use his coping system during actual or simulated combat. Since this is a training program, it must be assumed that simulated combat exercises will yield the most training opportunities. Therefore, training exercises must be designed so that the leader/commander will be forced to utilize his coping skills. This requires that realism be emphasized. In fact, the military has been attempting to do just that. The Army has

Tactical Training Centers and the Navy its Fleet Exercises and Battle Force Inport Training. While these training systems represent a major step in the right direction, they focus on short term results (3-5 days). The drawbacks associated with this approach were discussed in Chapters IV and V. More emphasis must be placed on developing and utilizing skills to remain effective for the long term (weeks).

Since, in most cases, this length of time is not available, some method must be developed to compress the anticipated stressors and decision-making requirements into a shorter period. While the possible ways to accomplish this goal are limited only by imagination, the following techniques and simulations may be useful in creating a stressor filled environment during an exercise:

- demanding physical activity before starting,
- no sleep up to 48 hours prior to the exercise,
- around the clock exercises,
- confusion and communication difficulties,
- logistics problems, and
- equipment malfunctions.<sup>4</sup>

Since field exercise design is not the subject of this paper, the question will not be addressed further. Suffice it to say that this is one area which will require further study.

#### ENDNOTES

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2. D.A. Benge, et al, "Commanding Above the Stress of Battle," Defense Force Journal, May/June 1985, p.33-34.

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4. Department of the Army, Field Manual 22-9, p. 2-7.

COMBAT STRESS AND THE SENIOR LEADER:  
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CHAPTER VII

CONCLUSIONS AND RECOMMENDATIONS

The acid test of an officer who aspires to high command is his ability to be able to grasp quickly the essentials of a military problem, to decide rapidly what he will do... Above all, he has got to rid himself of all irrelevant detail; he must concentrate on the essentials... When all is said and done the greatest quality required in a commander is "decision"... Indecision and hesitation are fatal in any officer; in a C.-in-C. they are criminal.

Field-Marshal the Viscount  
Montgomery of Alamein, K.G.,  
Memoirs.<sup>1</sup>

The combat effectiveness of a unit is decreased by loss of manpower. Whether this loss is caused by death, physical wounds or psychological degradation, the result is the same. The military services have devised systems to train personnel which minimize the possibility of becoming physically wounded or killed, but have not addressed the loss of manpower because of psychological degradation brought on by battle stress.

The ability to withstand the degrading effects of battle stress is even more important for the leader/commander. Leadership is the keystone for sustained unit performance.<sup>2</sup> If the leader's performance is degraded for any of the myriad reasons discussed, he is unable to plan properly or make the

rapid and concise decisions required in battle. Faulty decisions by the leader result in unnecessary deaths and possibly the loss of a battle or the war.

There is an added benefit which would be derived from the proposed program. Once in place, the officer corps will benefit from the results of the program immediately, war or no war. This translate into a more effective officer corps, hence a more professional, effective, and efficiently run military organization. Morale throughout the military should improve, which should lead to increased retention and decreased personnel costs.

The stress reduction training program advanced in this paper is only a preliminary proposed system. Before being placed into the military training system it must be refined, tested, and evaluated. Such questions as how this system would be incorporated into the current instructional package with minimal disruption, what the actual dollar cost would be, how effective the system would be, and what type of pilot project should be used to determine the effectiveness, need to be answered.

The current catchword in military training is "realism," which, when discussing stress reduction, translates into stress inoculation techniques. While this may be adequate for the purposes of training at the tactical or troop level, it is insufficient for training the senior leader. What is required is a system which will be realistic, but must also emphasize use of the whole spectrum of tools available to assist the leader in his ability to perform effectively for as long as possible. The

system must couple both formal classroom training and realistic field exercises.

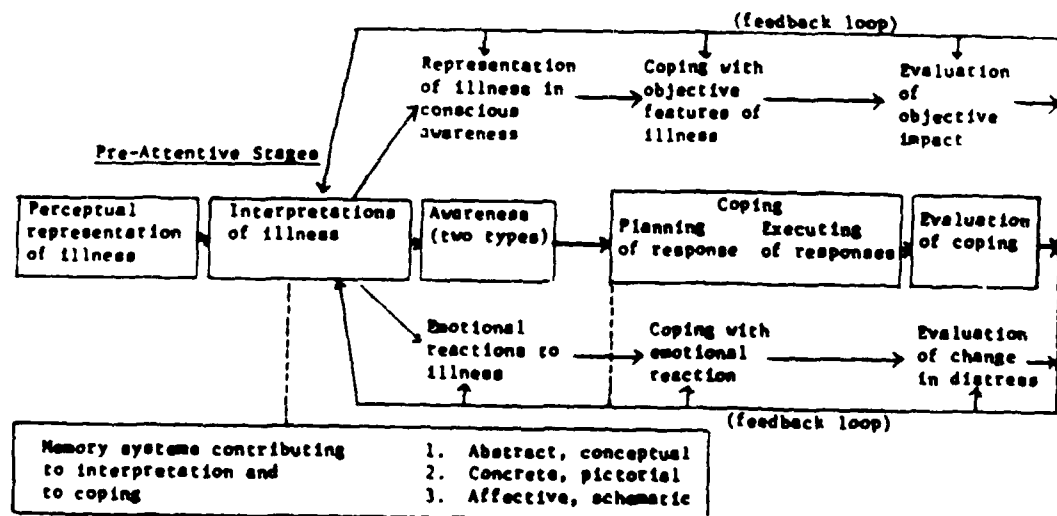
The system proposed in Chapter VI meets these requirements. It would be an institutionalized training system that is comprehensive, phased to the transition levels of responsibility, allowing specific stressors to be targeted, and is readily coordinated with field training.

#### ENDNOTES

1. Field-Marshal the Viscount Montgomery of Alamein, K.G., Memoirs, p. 313.
2. Department of the Army, Field Manual 22-9, p. 2-2.

## APPENDIX A

### LEVENTHAL AND NERENZ MODEL OF HUMAN RESPONSE TO STRESS<sup>1</sup>



Note 1. Adapted from Howard Leventhal and David R. Nerenz, "A Model for Stress Research with some Implications for the Control of Stress Disorder," in Stress Reduction and Prevention, ed. by Donald Meichenbaum and Matt E. Jaremko.



## APPENDIX B

### SELYE'S GENERAL ADAPTATION SYNDROME<sup>1</sup>

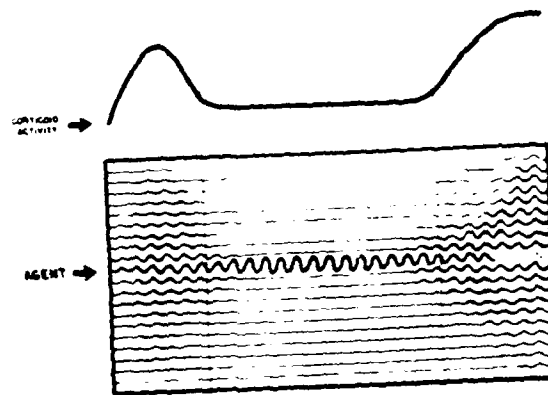


Fig. 19

#### Alarm Reaction

Auxiliary mechanisms are mobilized to maintain life so that the reaction spreads to large territories. No organ system is as yet specially developed to cope with the task at hand.

#### Stage of Resistance

Adaptation is acquired due to optimum development of the most appropriate specific channel of defense. Spatial concentration of the reaction makes corticoid production unnecessary.

#### Stage of Exhaustion

The reaction spreads again due to wear and tear in the most appropriate channel. Corticoid production rises, but can maintain life only until auxiliary channels are exhausted.

Note 1: Adapted from Selye, p. 163.

## APPENDIX C

### SUMMARY OF SOCIAL ENGINEERING STRATEGIES<sup>1</sup>

#### Adaptive Stress

- (a) Establish routines when possible.
- (b) Use time-blocking techniques.
- (c) Establish a "mental health day."
- (d) If possible, avoid or minimize other changes during periods of massive change.

#### Stress from Frustration

- (a) Practice time management and set priorities.
- (b) Avoid overloading situations-avoid overcommitments by learning to say no.
- (c) Delegate responsibility.
- (d) Reduce the task into manageable parts.
- (e) Enlist the aid/support of others.
- (f) Accept fallibility.
- (g) Determine optimal stress levels.
- (h) Avoid exposure to stress.

#### Deprivational Stress

- (a) Plan ahead to avoid potentially stressful situations.
- (b) Realize your vulnerability to deprivational stress.
- (c) Find relaxing activities which are not overly complex or ego-involved.
- (d) Remember that boredom does not equal relaxation.

#### Bioecological Stress

- (a) Use nutritional engineering.
- (b) Avoid exposure to noise.

Note 1: Adapted from Girdano and Everly, p. 108.

## APPENDIX D

### SUMMARY OF PERSONALITY ENGINEERING STRATEGIES<sup>1</sup>

#### Poor Self-esteem and Depression

- (a) Verbalize your positive qualities.
- (b) Accept compliments.
- (c) Practice the Assertiveness Ladder.
- (d) Study Interpersonal Effectiveness Training.

#### Type A Behavior

- (a) Utilize time management.
- (b) Reduce ego involvement.
- (c) Use the Goal Path Model for planning.
- (d) Practice concentration.
- (e) Engage in thought-stopping.

#### Anxious Reactivity

- (a) Engage in thought-stopping.

#### Need for Control

- (a) Do breathing exercises.
- (b) Consider cognitive restructuring.

Note 1: Adapted from Girdano and Everly, p. 124.

## APPENDIX E

### HOLMES AND RAHE SOCIAL READJUSTMENT RATING SCALE<sup>1</sup>

<u>Rank</u>	<u>Life event</u>	<u>Value</u>
1.	Death of spouse	100
2.	Divorce	73
3.	Marital seperation	65
4.	Jail term	63
5.	Death of close family member	63
6.	Personal injury or illness	53
7.	Marriage	50
8.	Loss of job	47
9.	Marital reconciliation	45
10.	Retirement	45
11.	Change in health of family member	44
12.	Pregnancy	40
13.	Sex difficulties	39
14.	Gain of new family member	39
15.	Business readjustment	39
16.	Change in personal finance	38
17.	Death of close friend	37
18.	Change to different type work	36
19.	Change in number of arguments with spouse	35
20.	Mortgage over \$7000	31
21.	Foreclosure of mortgage or loan	30
22.	Change in responsibilities at work	29
23.	Son or daughter leaving home	29
24.	Trouble with in-laws	29
25.	Outstanding personal achievement	28

Note 1: Adapted from Holmes and Rehe, p. 213-218.

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